

Response to Restriction Requirement
Docket No. 020.0341.US.CON

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

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Listing of Claims:

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- 1 1. (original): A system for diagnosing and monitoring respiratory
2 insufficiency for automated remote patient care, comprising:
3 a database storing a plurality of monitoring sets which each comprise
4 recorded measures relating to patient information recorded on a substantially
5 continuous basis;
6 a server retrieving and processing a plurality of the monitoring sets,
7 comprising:
8 a comparison module determining a patient status change by
9 comparing at least one recorded measure from each of the monitoring sets to at
10 least one other recorded measure with both recorded measures relating to a same
11 type of patient information; and
12 an analysis module testing each patient status change against an
13 indicator threshold corresponding to the same type of patient information as the
14 recorded measures which were compared, the indicator threshold corresponding
15 to a quantifiable physiological measure of a pathophysiology indicative of
16 respiratory insufficiency.
- 1 2. (original): A system according to Claim 1, further comprising:
2 the analysis module managing the respiratory insufficiency and outcomes
3 thereof through administration of at least one of antibiotic and antiviral therapies,
4 bronchodilator therapies, oxygen therapies, anti inflammation therapies, electrical
5 therapies, and mechanical therapies.
- 1 3. (original): A system according to Claim 1, further comprising:
2 a database module periodically receiving a monitoring set for an
3 individual patient, each recorded measure in the monitoring set having been

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4 recorded by at least one of a medical device adapted to be implanted in an
5 individual patient and an external medical device proximal to the individual
6 patient when the device measures are recorded and storing the received
7 monitoring set in the database as part of a patient care record for the individual
8 patient.

1 4. (original): A system according to Claim 3, further comprising:
2 a set of further indicator thresholds, each indicator threshold
3 corresponding to a quantifiable physiological measure used to detect a
4 pathophysiology indicative of diseases other than respiratory insufficiency;
5 the comparison module comparing each patient status change to each such
6 further indicator threshold corresponding to the same type of patient information
7 as the at least one recorded measure and the at least one other recorded measure;
8 and
9 the analysis module testing each patient status change against each such
10 further indicator threshold corresponding to the same type of patient information
11 as the recorded measures which were compared.

1 5. (original): A system according to Claim 1, further comprising:
2 the comparison determining a change in patient status by comparing at
3 least one recorded quality of life measure to at least one other corresponding
4 recorded quality of life measure.

1 6. (original): A system according to Claim 1, further comprising:
2 a set of stickiness indicators for each type of patient information, each
3 stickiness indicator corresponding to a temporal limit related to a program of
4 patient diagnosis or treatment;
5 the comparison module comparing a time span occurring between each
6 patient status change for each recorded measure to the stickiness indicator relating
7 to the same type of patient information as the recorded measure being compared;
8 and

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9 the analysis module determining a revised program of patient diagnosis or
10 treatment responsive to each patient status change occurring subsequent to a time
11 span exceeding the stickiness indicator.

1 7. (original): A system according to Claim 1, further comprising:
2 a database module retrieving the plurality of monitoring sets from one of a
3 patient care record for an individual patient, a peer group, and a overall patient
4 population.

1 8. (original): A system according to Claim 1, further comprising:
2 the database further storing a reference baseline comprising recorded
3 measures which each relate to patient information recorded during an initial time
4 period and comprise either medical device measures or derived measures
5 calculable therefrom; and
6 a database module obtaining at least one of the at least one recorded
7 measure and the at least one other recorded measure from the retrieved reference
8 baseline.

1 9. (original): A system according to Claim 1, wherein the indicator
2 thresholds relate to at least one of a finding of reduced exercise capacity and
3 respiratory distress.

1 10. (original): A system according to Claim 9, wherein the indicator
2 thresholds relating to the finding of reduced exercise capacity are selected from
3 the group comprising decreased cardiac output, decreased mixed venous oxygen
4 score, decreased patient activity score and decreased exercise tolerance.

1 11. (original): A system according to Claim 9, wherein the indicator
2 thresholds relating to the finding of respiratory distress are selected from the
3 group comprising a spike in patient activity score, a spike in pulmonary artery
4 pressure, a spike in right ventricular pressure, a spike in transthoracic impedance,
5 increased respiratory rate, increased minute ventilation, increased temperature,

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6 decreased QT interval, decreased arterial oxygen and decreased arterial carbon
7 dioxide.

1 12. (original): A method for diagnosing and monitoring respiratory
2 insufficiency for automated remote patient care, comprising:
3 storing a plurality of monitoring sets which each comprise recorded
4 measures relating to patient information recorded on a substantially continuous
5 basis in a database;
6 retrieving a plurality of the monitoring sets from the database;
7 determining a patient status change by comparing at least one recorded
8 measure from each of the monitoring sets to at least one other recorded measure
9 with both recorded measures relating to a same type of patient information; and
10 testing each patient status change against an indicator threshold
11 corresponding to the same type of patient information as the recorded measures
12 which were compared, the indicator threshold corresponding to a quantifiable
13 physiological measure of a pathophysiology indicative of respiratory
14 insufficiency.

1 13. (original): A method according to Claim 12, further comprising:
2 managing the respiratory insufficiency and outcomes thereof through
3 administration of at least one of antibiotic and antiviral therapies, bronchodilator
4 therapies, oxygen therapies, anti inflammation therapies, electrical therapies, and
5 mechanical therapies.

1 14. (original): A method according to Claim 12, further comprising:
2 periodically receiving a monitoring set for an individual patient, each
3 recorded measure in the monitoring set having been recorded by at least one of a
4 medical device adapted to be implanted in an individual patient and an external
5 medical device proximal to the individual patient when the device measures are
6 recorded; and
7 storing the received monitoring set in the database as part of a patient care
8 record for the individual patient.

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1 15. (original): A method according to Claim 14, further comprising:
2 defining a set of further indicator thresholds, each indicator threshold
3 corresponding to a quantifiable physiological measure used to detect a
4 pathophysiology indicative of diseases other than respiratory insufficiency;
5 comparing each patient status change to each such further indicator
6 threshold corresponding to the same type of patient information as the at least one
7 recorded measure and the at least one other recorded measure; and
8 testing each patient status change against each such further indicator
9 threshold corresponding to the same type of patient information as the recorded
10 measures which were compared..

1 16. (original): A method according to Claim 12, further comprising:
2 determining a change in patient status by comparing at least one recorded
3 quality of life measure to at least one other corresponding recorded quality of life
4 measure.

1 17. (original): A method according to Claim 12, further comprising:
2 defining a set of stickiness indicators for each type of patient information,
3 each stickiness indicator corresponding to a temporal limit related to a program of
4 patient diagnosis or treatment;
5 comparing a time span occurring between each patient status change for
6 each recorded measure to the stickiness indicator relating to the same type of
7 patient information as the recorded measure being compared; and
8 determining a revised program of patient diagnosis or treatment
9 responsive to each patient status change occurring subsequent to a time span
10 exceeding the stickiness indicator.

1 18. (original): A method according to Claim 12, further comprising:
2 retrieving the plurality of monitoring sets from one of a patient care record
3 for an individual patient, a peer group, and a overall patient population.

1 19. (original): A method according to Claim 12, further comprising:

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2 retrieving a reference baseline comprising recorded measures which each
3 relate to patient information recorded during an initial time period and comprise
4 either medical device measures or derived measures calculable therefrom; and
5 obtaining at least one of the at least one recorded measure and the at least
6 one other recorded measure from the retrieved reference baseline.

1 20. (original): A method according to Claim 12, wherein the indicator
2 thresholds relate to at least one of a finding of reduced exercise capacity and
3 respiratory distress.

1 21. (original): A method according to Claim 20, wherein the indicator
2 thresholds relating to the finding of reduced exercise capacity are selected from
3 the group comprising decreased cardiac output, decreased mixed venous oxygen
4 score, decreased patient activity score and decreased exercise tolerance.

1 22. (original): A method according to Claim 20, wherein the indicator
2 thresholds relating to the finding of respiratory distress are selected from the
3 group comprising a spike in patient activity score, a spike in pulmonary artery
4 pressure, a spike in right ventricular pressure, a spike in transthoracic impedance,
5 increased respiratory rate, increased minute ventilation, increased temperature,
6 decreased QT interval, decreased arterial oxygen and decreased arterial carbon
7 dioxide.

1 23. (original): A computer-readable storage medium holding code for
2 diagnosing and monitoring respiratory insufficiency for automated remote patient
3 care, comprising:

4 code for storing a plurality of monitoring sets from a database which each
5 comprise recorded measures relating to patient information recorded on a
6 substantially continuous basis;

7 code for retrieving a plurality of the monitoring sets from the database;

8 code for determining a patient status change by comparing at least one
9 recorded measure from each of the monitoring sets to at least one other recorded

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10 measure with both recorded measures relating to a same type of patient
11 information; and
12 code for testing each patient status change against an indicator threshold
13 corresponding to the same type of patient information as the recorded measures
14 which were compared, the indicator threshold corresponding to a quantifiable
15 physiological measure of a pathophysiology indicative of respiratory
16 insufficiency.

1 24. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for managing the respiratory insufficiency and outcomes thereof
4 through administration of at least one of antibiotic and antiviral therapies,
5 bronchodilator therapies, oxygen therapies, anti inflammation therapies, electrical
6 therapies, and mechanical therapies.

1 25. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for periodically receiving a monitoring set for an individual patient,
4 each recorded measure in the monitoring set having been recorded by at least one
5 of a medical device adapted to be implanted in an individual patient and an
6 external medical device proximal to the individual patient when the device
7 measures are recorded; and
8 code for storing the received monitoring set in the database as part of a
9 patient care record for the individual patient.

1 26. (original): A storage medium according to Claim 25; further
2 comprising:
3 code for defining a set of further indicator thresholds, each indicator
4 threshold corresponding to a quantifiable physiological measure used to detect a
5 pathophysiology indicative of diseases other than respiratory insufficiency;

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6 code for comparing each patient status change to each such further
7 indicator threshold corresponding to the same type of patient information as the at
8 least one recorded measure and the at least one other recorded measure; and
9 code for testing each patient status change against each such further
10 indicator threshold corresponding to the same type of patient information as the
11 recorded measures which were compared..

1 27. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for determining a change in patient status by comparing at least one
4 recorded quality of life measure to at least one other corresponding recorded
5 quality of life measure.

1 28. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for defining a set of stickiness indicators for each type of patient
4 information, each stickiness indicator corresponding to a temporal limit related to
5 a program of patient diagnosis or treatment;
6 code for comparing a time span occurring between each patient status
7 change for each recorded measure to the stickiness indicator relating to the same
8 type of patient information as the recorded measure being compared; and
9 code for determining a revised program of patient diagnosis or treatment
10 responsive to each patient status change occurring subsequent to a time span
11 exceeding the stickiness indicator.

1 29. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for retrieving the plurality of monitoring sets from one of a patient
4 care record for an individual patient, a peer group, and a overall patient
5 population.

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- 1 30. (original): A storage medium according to Claim 23, further
2 comprising:
3 code for retrieving a reference baseline comprising recorded measures
4 which each relate to patient information recorded during an initial time period and
5 comprise either medical device measures or derived measures calculable
6 therefrom; and
7 code for obtaining at least one of the at least one recorded measure and the
8 at least one other recorded measure from the retrieved reference baseline.
- 1 Claims 31-81 (withdrawn).